

Abstract

The present invention relates to an organic thin film transistor (OTFT) comprising: a substrate (1), a gate electrode (2) formed on the substrate (1), a gate insulation layer formed on the gate electrode, a source electrode (5) and a drain electrode (6) formed on the gate insulation layer including a first insulation layer (3) and a second insulation layer (4) with different dielectric constants, and an active layer (7) which overlays the source electrode (5) and the drain electrode (6). Without adding the conventional complicated processes like photolithography but adding two simple processes of spin coating or vaporously coating the second insulation film and self-aligned dry RIE, the present invention not only can improve the carrier's injection property so as to improve the OTFT device's properties, but also can block the leakage current of the gate insulation layer and reduce the device's parasitic capacitance. Therefore, the material with high dielectric constant can be used as the insulation layer to increase the channel capacitance so as to reduce threshold voltage of the device and reduce the adverse effect of the leakage between the source and gate electrodes, the gate and drain electrodes.